(d) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to a nucleic acid molecule of (a) or (b); and

(e) a fragment, derivative or allelic variant of a nucleic acid molecule mentioned under (a), (b), (c), or (d).

DDED per A
NCELLED per C

42. The starch of claim 41 wherein the phosphate content is increased when compared to starch from wild-type plants.

DDED per A
NCELLED per C

43. A protein encoded by a nucleic acid molecule encoding a protein which is present in plant cells in starch granule-bound form as well as in soluble form, said nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule encoding a protein with the amino-acid sequence indicated in SEQ ID NO: 2;

(b) a nucleic acid molecule comprising the coding region of the nucleotide sequence indicated in SEQ ID NO: 1;

(c) a nucleic acid molecule hybridizing to a nucleic acid molecule of (a) or (b);

(d) a nucleic acid molecule the sequence of which is degenerate as a result of the genetic code to a nucleic acid molecule of (a) or (b); and

(e) a fragment, derivative or allelic variant of a nucleic acid molecule of (a), (b), (c), or (d).

DDED per A
NCELLED per C

44. A method for the production of a protein, which is present in plant cells in granule-bound as well as in soluble form, in which a host cell which is genetically modified with a nucleic acid molecule encoding a protein of claim 43, wherein said host cell is cultivated under conditions allowing for the expression of the protein and in which the protein is isolated from the cells and/or the culture medium.

DDED per A
NCELLED per C

45. A protein obtainable by the method of claim 44.

DDED per A
NCELLED per C

46. An antibody specifically recognizing the protein of claim 43 or claim 45.

DDED per A
NCELLED per C

47. A nucleic acid molecule with a length of at least 15 nucleotides which specifically hybridizes to a nucleic acid molecule encoding a protein of claim 43.

DDED per A
MENDED per C, per D, E

48. A DNA molecule encoding an antisense-RNA complementary to the transcripts of a DNA molecule encoding a protein of claim 43.

DDED per A
ENDED per C
NCELLED per D

49. A DNA molecule encoding an RNA with ribozyme activity which specifically cleaves transcripts of a DNA molecule encoding a protein of claim 43.

DED per A
ELLED per C

50. A DNA molecule encoding an RNA which upon expression in a plant cell leads to a reduction of the expression of a nucleic acid molecule encoding a protein of claim 43 due to a cosuppression effect.

)DED per A MENDED per C, per D, E	51. A vector containing a DNA molecule of any one of claims 48 to 50.
)DED per A MENDED per C	52. The vector of claim 51, wherein the DNA molecule is combined with regulatory DNA elements ensuring transcription in plant cells.
\DDED per A MENDED per C, per D, E	53. A host cell containing a DNA molecule of any one of claims 48 to 50 or a vector of claim 51 or 52.
DDED per A MENDED per C, per D, E	54. A transgenic plant cell containing a DNA molecule of any one of claims 48 to 50 in combination with regulatory DNA elements ensuring transcription in plant cells.
)DED per A	55. The transgenic plant cell of claim 54, in which the activity of at least one further enzyme involved in starch biosynthesis or modification is reduced when compared to non-transformed plants.
)DED per A	56. The transgenic plant cell of claim 55 in which the activity of a branching enzyme is reduced.
)DED per A	57. The transgenic plant cell of claim 55 in which the activity of a starch granule-bound starch synthase of the isotype I (GBSS I) is reduced.

DDED per A
NCELLED per C

58. A transgenic plant obtainable by regenerating a plant cell of any one of claims 54 to 57.

DDED per A
NCELLED per C

59. Starch obtainable from plant cells of any one of claims 54 to 57 or from plants of claim 58.

DDED per A
MENDED per C
per D, E

60. An RNA molecule obtainable by transcription of a DNA molecule of any one of claims 48 to 50.

DDED per A
MENDED per C
per D, E

61. A method for the production of transgenic plant cells synthesizing a modified starch wherein the amount of proteins of claim 43, which are synthesized in the cells in endogenous form, is reduced in the cells.

DDED per A
MENDED per C
CANCELLED per E

62. The method of claim 61 wherein the reduction of the amount of proteins of claim 43 in the cells is caused by an antisense effect.

DED per A
ENDED per C
NCELLED per D

63. The method of claim 61 wherein the reduction of the amount of proteins of claim 43 in the cells is caused by a ribozyme effect.

DDED per A
CELLED per C

64. The method of claim 61 wherein the reduction of the amount of proteins of claim 43 in the cells is caused by a cosuppression effect.

DDED per A
IENDED per C, per E

65. The method of any one of claims 61 to 64, wherein the enzyme activity of at least one further enzyme involved in the starch biosynthesis and/or modification is reduced.

DDED per A

66. The method of claim 65 wherein the enzyme is a branching enzyme.

DDED per A

67. The method of claim 65 wherein the enzyme is a starch granule-bound starch synthase of the isotype I (GBSSI).

DDED per A
IENDED per C, per E

~~68. A plant cell obtainable by a method of any one of claims 61 to 67.~~

DDED per A
IENDED per C

69. A transgenic plant obtainable by regenerating the plant cell of claim 68.

DDED per A
ICELLED per C

70. Starch obtainable from plant cells of claim 68 or a plant of claim 69.

DED per A
CELLED per C

71. The starch of claim 70 wherein it is derived from potato.

DED per A
CELLED per C

72. The starch of claim 70 or 71 exhibiting a reduced phosphate content when compared to starch from wild-type plants.

DDED per A
ENDED per C, per D

73. The propagation material of plants of claim 58 or 69, containing plant cells of any one of claims 54 to 57 or of claim 68.

DDED per A
ENDED per C

74. The transgenic plant of claim 58 or 69 which is a potato plant.

DDED per A
MENDED per C

75. Tuber of a potato plant of claim 74.

DDED per A

76. The tuber of claim 75 which in comparison to tubers of wild-type plants exhibits a reduced cold sweetening.

DDED per A
NCELLED per C

77. The use of the tuber according to claim 75 for the production of fried foodstuff.

DDED per A
NCELLED per C

78. A transgenic plant cell that synthesizes a modified starch compared to starch from wild-type cells, wherein the amount of a protein of claim 43 is increased in the transgenic plant cell when compared to a wild-type plant cell.

DDED per A
NCELLED per C

79. A transgenic plant cell that synthesizes a starch with an increased phosphate content compared to starch from wild-type cells, wherein the amount of a protein of claim 43 is increased in the transgenic plant cell when compared to the wild-type plant cell.

DDED per A
NCELLED per C

80. The DNA molecule of claim 48 which has a length of at least 15 nucleotides.

)DED per A
AENDED per C, pend)

81. The transgenic plant cell of claim 54 wherein the amount of a protein of claim 43 is reduced in the transgenic plant cell when compared to the wild-type plant cell.

DDED per A
NCELLED per C

82. Starch obtainable from plant cells which are obtainable by the method of claim 66 exhibiting an increased amylose content when compared to starch from wild-type plants.

DDED per A
NCELLED per C

83. The starch of claim 82 which exhibits a reduced phosphate content.

DDED per A
NCELLED per C

84. The starch of claim 82 or 83 which is derived from potato.

DDED per A
NCELLED per C

85. Starch obtainable from plant cells which are obtainable by the method of claim 67 exhibiting an increased amylopectin content when compared to starch from wild-type plants.

DDED per A
NCELLED per C

86. The starch of claim 85 which exhibits a reduced phosphate content.

DDED per A
NCELLED per C

87. The starch of claim 85 or 86 which is derived from potato.